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hereby certify that the annexed is a true copy of the Provisional specification in
connection with Application No. PP 3606 for a patent by EIAN DOUGLAS
MATHIESON and BRIAN DOUGLAS MATHIESON filed on 20 May 1998.

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MANAGER EXAMINATION SUPPORT AND
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AUSTRALIA

Patents Act 1990

PROVISIONAL SPECIFICATION

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Invention Title:

Cable connection device and method.

The invention is described in the following statement:

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Cable Connection Device And Method

Background Of The Invention

5 The present invention relates to a device with the capability of allowing electronic circuits to be easily fitted to pre-existing electrical cables. The device utilises a method of providing good electrical and mechanical contact with electrical cables, without any need for alteration of the electrical cables.

10 Description Of The Prior Art

In the field of automotive power electronics, devices for monitoring and control of electrical characteristics, such as voltage levels, of the power circuitry are presently provided pre-attached to the electronic cabling to be used in the automotive application.

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For example, charging leads for charging or obtaining charge from a power source are available with integrally formed electronic circuitry having the function of preventing surges in electronic variables, such as voltage fluctuations, which can occur when current passes from a voltage source. This can occur in situations such as using charging cables to charge
20 the battery of a motor vehicle.

Certain electronic variable monitoring, such as current continuity or voltage level, is presently available as a transportable diagnostic device for pre-existing cabling. These devices usually comprise a sharp metallic point which when pushed through cable insulation provides
25 electrical contact with the conducting core of the electrical cable. These devices offer no permanent electronic monitoring, control or protection capabilities, but rather serve as a 'trouble-shooting' diagnostic.

This identifies a need for a device that may be used to easily attach an arbitrary electronic
30 circuit to a wide range of pre-existing cables, either permanently or temporarily.

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Summary Of The Invention

The present invention seeks to provide a casing for an electronic circuit such that the casing assists in making stable electrical contact between the electronic circuitry integrally formed
5 within the casing and the electrical cables to be monitored or controlled.

In one broad form, the present invention provides a casing for housing an electronic circuit, said casing characterised in that it includes at least one cable connection means to secure said casing to a cable.

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Preferably said cable connection means is formed by a hinged wing adapted to close substantially about said cable.

Also preferably said cable connection means includes at least one conductive spike adapted
15 to pierce the insulative sheath of said cable.

In its preferred form, in use, when said cable is positioned within said cable connection means and said hinged wing is closed therearound, said insulative sheath of said cable is pierced by said conductive spike(s) to facilitate an electrical connection between said cable and said
20 electronic circuit.

Brief Description Of The Drawings

The present invention will become more fully understood from the following detailed
25 description of a preferred but non-limiting embodiment thereof, described in connection with the accompanying drawings, wherein:

Figure 1 illustrates a preferred embodiment of the present invention, and shows the lower half of the device; and,

Figure 2 illustrates a preferred embodiment of the present invention, and shows the
30 upper half of the device.

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Figure 3 illustrates a preferred embodiment of the present invention, and shows an end-view of the complete device.

Detailed Description Of A Preferred Embodiment

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Throughout the drawings, like numerals will be used to identify similar features, except where expressly otherwise indicated.

A preferred embodiment of the present invention is shown in figure 1, figure 2, and figure 10 3. In this embodiment the present invention provides a moulded plastic casing to house a printed circuit board together with appropriate electronic components. For example, the casing may house the voltage monitoring and control electronic circuit disclosed in the Applicant's Australian Patent No. 620091.

15 Figure 1 shows the lower half of the casing 1, the upper half 6 being presented in figure 2. Connecting these halves together forms the device, as shown end-on in figure 3.

Each 'wing' 11 of the casing pivots along the hinge means 12 such that when the wing 11 is closed, as per the position illustrated in figure 3, an electrical cable may be permanently or 20 removably clamped therein.

Locking pins 4 in conjunction with the locking pin receptors 7 provide the means of fixing the flexible wings 11 into place so as the device remains clamped to an electrical cable. Underneath the locking pin receptors are tapered webs which provide mechanical support for the locking pin receptors and also help guide the electronic cable into a central position over 25 the electronic connector spikes 10, ensuring they make contact with the conductive core of the electrical cabling when the wings 11 are closed.

The protrusions 2 and 3 provide means for mechanical clamping of the device to electrical cable. These protrusions extend from the surface of the casing and physically push the cable 30 onto the spiked electrical contacts 10 of the electronic circuit board 9. The protrusions 2 are typically for use in clamping cables of less than, say 12 mm, outer diameter, whilst the

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protrusions 3 aid in clamping cables with an outer diameter of greater than, say 4 mm. For small outer diameter cables grommets may be supplied into the arches 5 and help hold the cables in position.

5 The protrusions 3, of which four are present in this embodiment, are manufactured to bend at their base so as to provide a clamping force due to relaxing of the distorted moulded plastic. Bending of the protrusions 3 also allows the protrusions 2 to clamp larger outer diameter cables.

10 A hole 8 in the upper half of the device allows viewing of an LED located on the electronic circuit board that indicates the status of certain electronic variables.

It will be understood that, whilst a very specific embodiment has been described, numerous other variations and modifications of the invention will become apparent to persons skilled in the art. All such variations and modifications should be considered to fall within the spirit and scope of the invention as broadly hereinbefore described.

Dated this 20th day of May 1998

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By Their Patent Attorneys

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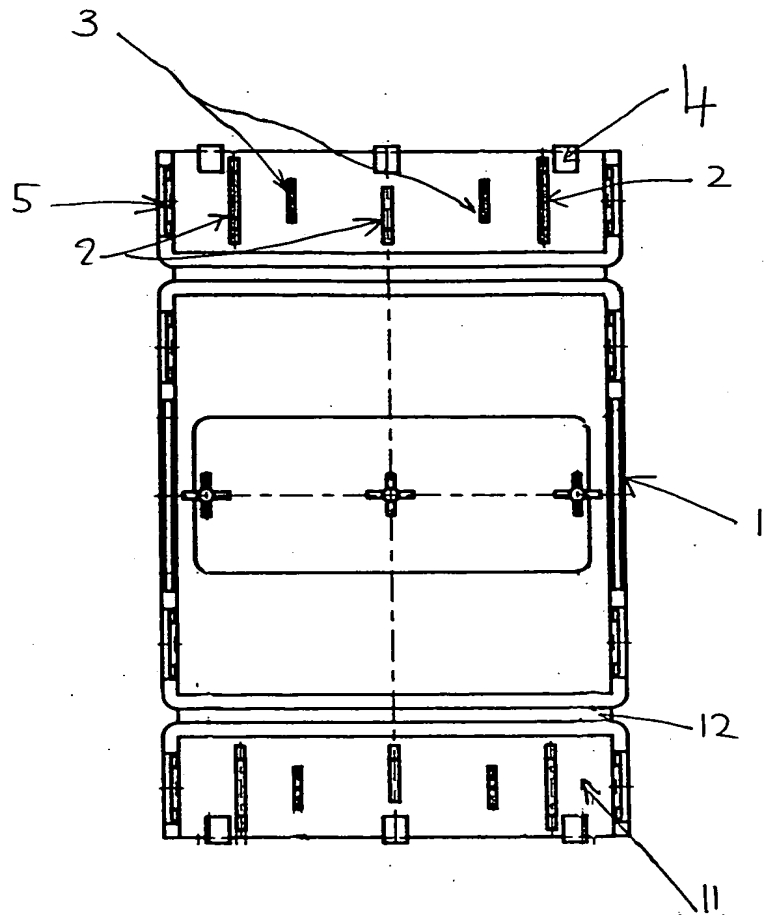


FIG. 1

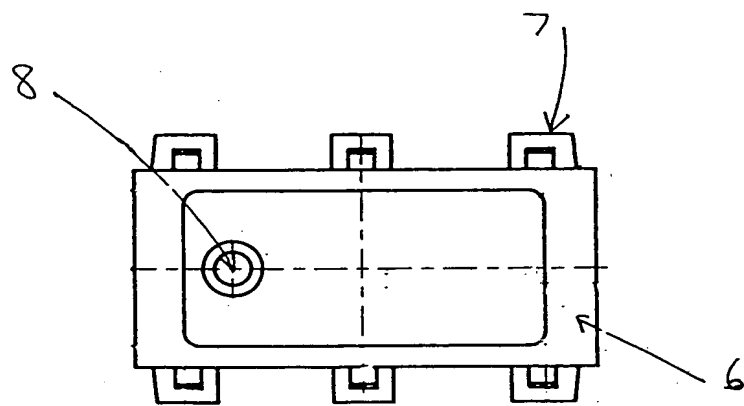


FIG 2

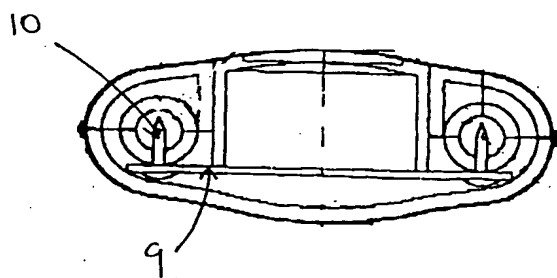


FIG. 3